

## ABSTRACT OF THE DISCLOSURE

A method for producing a photostimulable phosphor represented by a following General Formula (1), includes subjecting phosphor particles in the photostimulable phosphor to a surface treatment by using a fluorine-containing compound after calcining the phosphor particles: General Formula (1),  $(\text{Ba}_{1-x}\text{M}^1)\text{FBryI}_{1-y}\text{X:aM}^2, \text{bLn}, \text{cO}$  wherein  $\text{M}^1$  is at least one alkaline earth metal atom selected from Mg, Ca, Sr, Zn and Cd;  $\text{M}^2$  is at least one alkaline metal atom selected from Li, Na, K, Rb and Cs; X is at least one halogen atom selected from Cl, Br and I; Ln is at least one rare earth atom selected from Ce, Pr, Sm, Eu, Gd, Tb, Tm, Dy, Ho, Nd, Er and Yb; and x, y, a, b and c are numbers within the range of  $0 \leq x \leq 0.3$ ,  $0 \leq y \leq 0.3$ ,  $0 \leq a \leq 0.05$ ,  $0 < b \leq 0.2$  and  $0 < c \leq 0.1$ , respectively.